

tumor prior to or after drug-EPT is likely to expedite wound healing and reduce potential complications. Further with this invention methodology, both intratumoral and intravenous injection of drug can be used.

[0087] With respect to cohorts 9-11, we observed that the consistency of the tumor changed progressively with time after treatment. When the tumor was excised two hours after treatment (cohort 10) its consistency was softer, less well defined and it leaked edemic fluid but relatively little blood. Tumors excised 24 hrs after treatment (cohort 11) had completely softened to a consistency sometimes referred to as liquefactive necrosis. At that time point surgical excision was somewhat difficult because the boundaries of the tumor were ill defined as compared to the solid tumor tissue mass of cohort 9 animals. Interestingly, we also noticed a softening of the tumor even 15 minutes after treatment when we removed tumors from cohorts 5 and 7, which made it slightly more difficult to perform surgical removal with well defined boundaries than in the case of untreated tumors. However, this did not affect the success of the treatment since both cohorts 5 and 7 showed no tumor recurrence. These observations provide proof of the opportunity of using drug, such as Bleomycin or other anticancer agent, in combination with EPT as adjuvant or tumor debulking therapy that can additionally be used alone or in conjunction with other cancer therapies. For example, a tumor could be treated with Bleomycin-EPT, the disintegrated tumor material be removed by a simple minimally invasive procedure, and if desired, followed by conventional treatments such as radiation or chemotherapy, or other tumor therapy modalities. Easy removal of the liquefied tumor material can also allow the wound to heal faster and with fewer complications, especially in the case of large tumors.

[0088] All of the compositions and methods disclosed and claimed herein can be made and executed without undue experimentation in light of the present disclosure. While the compositions and methods of this invention have been described in terms of preferred embodiments, it will be apparent to those of skill in the art that variations may be applied to the compositions and methods and in the steps or in the sequence of steps of the method described herein without departing from the spirit and scope of the invention. More specifically, the described embodiments are to be considered in all respects only as illustrative and not restrictive. All similar substitutes and modifications apparent to those skilled in the art are deemed to be within the spirit and scope of the invention as defined by the appended claims.

[0089] All patents, patent applications, and publications mentioned in the specification are indicative of the levels of those of ordinary skill in the art to which the invention pertains. All patents, patent applications, and publications, including those to which priority or another benefit is claimed, are herein incorporated by reference to the same extent as if each individual publication was specifically and individually indicated to be incorporated by reference.

[0090] The invention illustratively described herein suitably may be practiced in the absence of any element(s) not specifically disclosed herein. Thus, for example, in each instance herein any of the terms “comprising”, “consisting essentially of”, and “consisting of” may be replaced with either of the other two terms. The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention that use of such terms and expressions imply excluding any equivalents

of the features shown and described in whole or in part thereof, but it is recognized that various modifications are possible within the scope of the invention claimed. Thus, it should be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and that such modifications and variations are considered to be within the scope of this invention as defined by the appended claims.

1-22. (canceled)

23. A method of reducing recurrence of tumor cell growth in a mammalian tissue, the method comprising:

- (a) resecting the tumor;
- (b) administering an agent capable of reducing tumor cell growth to the margin tissue after resecting the tumor; and
- (c) applying the at least one electroporative electric pulse to the margin tissue after resecting the tumor, thereby delivering the agent into cells of the margin tissue; wherein recurrence of tumor cell growth in the mammalian tissue is reduced.

24. The method of claim 23, wherein the agent is selected from the group consisting of a chemotherapeutic drug, bleomycin, cisplatin, a polypeptide, an antibody, an RNAi, an antisense nucleic acid, an expressible gene encoding a therapeutically active polypeptide, a chemokine, and a cytokine.

25. The method of claim 23, wherein administering the agent to the margin tissue comprises intravenous administration.

26. The method of claim 23, wherein the tumor cell is selected from the group consisting of: a cancer cell in cutaneous tissue, a cancer cell located on the head or neck of a mammal, a squamous cell carcinoma, a colon carcinoma, and a melanoma cell.

27. The method of claim 23, wherein the electroporative electric pulse comprises a pulse having a nominal field strength selected from the group consisting of: between 800 and 1500 V/cm, between 600 and 1500 V/cm, between 600 and 1400 V/cm, between 200 and 800 V/cm, between 1 and 600 V/cm, between 200 to 600 V/cm, between 400 and 600 V/cm, 1200 V/cm, and 1500 V/cm.

28. The method of claim 23, further comprising administering one or more additional cancer therapies.

29. The method of claim 28, wherein the one or more additional cancer therapies is selected from the group consisting of: radiation, chemotherapy, and antibody therapy.

30. The method of claim 23, wherein the method comprises reducing microtumor seeding in the margin tissue.

31. The method of claim 23, wherein the electroporative electric pulse is administered using an electroporation device comprising: an array of a multiplicity of electrodes capable of channeling a fluid volume from at least one variable volume reservoir to the tumor and the margin tissue around the tumor when the multiplicity of electrodes are positioned in the tumor and the margin tissue around the tumor, wherein said multiplicity of electrodes can be further energized in a predetermined format selected from the group consisting of energizing single pairs of electrodes, energizing opposed pairs of electrodes, energizing a selected portion of said electrodes sequentially, and energizing a selected portion of said electrodes simultaneously.